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ABSTRACT

This annotated bibliography presents resources that will enable parents to fulfill their responsibility for developing their children's abilities to do mathematics, while at the same time encouraging more positive attitudes towards mathematics. The resources are divided into three categories: (1) activities initiated in the home, (2) activities initiated at school, and (3) special curriculum development projects that promote parent involvement. Contains 63 annotated references. (MKR)

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Mathematics Education Resources: An Annotated Bibliography

PRIME: Parent Resources in Mathematics Education

by
Martin D. Hartog
&
Michelle K. Reed

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Mathematics Education Resources

An Annotated Bibliography

PRIME: Parent Resources in Mathematics Education

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Clearinghouse for Science, Mathematics, and Environmental Education — *December 1994*

Parent Guides for Home Activities

The Changing Mathematics Curriculum: A Booklet for Parents is available in both English and Spanish and is divided into four sections: (1) important facts about the school mathematics curriculum and mathematics instruction; (2) expectations about participation, calculators, cooperative learning, dialogue, and writing in typical K-12 mathematics classrooms; (3) examples of leading questions and prompts for parental input with homework; and (4) specific methods to aid in planning for student success in mathematics. A bibliographic appendix includes additional sources for information complete with addresses, phone numbers, and prices.

California State Department of Education. (1989). *The changing mathematics curriculum: A booklet for parents;* (1991). *La evolucion del curriculo de las matematicas: Un folleto para los padres de familia.* Sacramento: Author. (ED 315 287 and ED 340 576)

Children's Choices is an annual listing of all kinds of book recommended for children. Available free by sending a stamped, self-addressed envelope to International Reading Association, 800 Barksdale Road, P.O. Box 8139, Newark, DE 19714.

Create a Math Environment shows parents how to develop a mathematics environment for children in the home. Four major topics are considered: whole numbers, fractions, decimals, and basic geometry. Section One, Shoebox Math, describes activities to teach specific concepts within a manageable period of time. Materials are listed and diagrams illustrate procedures. Section Two, Quickies, is a fun section containing problems that promote thinking and looking for reasons or patterns. Section Three, Story Problems, contains word problems presented in the form of stories. Section Four, Arithmebuildity, applies skills and knowledge and encourages imagination. Section Five, Reinforcers, looks for everyday chores and activities that relate to mathematics. Appendices include a list of necessary materials, math-related toys and games, and math-related books for children.

Owens, V. W. (1992). *Create a math environment.* Waynesboro, VA: Eschar Publications (P.O. Box 1196, Waynesboro, VA 22980). $19.95. (SE 054 071)

EDTALK: What We Know About Mathematics Teaching and Learning is a guide for parents and the community about mathematics in the classroom and at home. The first section, Math in the Classroom, discusses student attitudes, relevance, content, subject integration, cooperative learning, higher order skills, active instruction, gender equity, minority students, disabled students, LEP students, textbooks, manipulatives, calculators, workbooks, assessment, international comparisons, and teachers. The second section, Math in the Home, discusses parent attitudes, homework, home reinforcements, and television. Includes a reference list of books and articles on each topic.

Council for Educational Development and Research [CEDR]. (1991). *EDTALK: What we know about mathematics teaching and learning.* Washington, DC: Author. (2000 L Street NW, Suite 601, Washington, DC 20036). (202) 223-1593. (ED 343 793)

Elementary School Mathematics: What Parents Should Know About...Estimation suggests activities for practicing estimation at home including: (1) frequent everyday uses of estimating that help children see and appreciate the practicality of mathematics; (2) making children aware of an unreasonable answer displayed on a calculator; (3) strengthening computational skills; (4) developing important thinking strategies, especially those useful in problem solving; and (5) fostering a healthy and positive attitude toward the study of mathematics.

Reys, B. (1982). *Elementary school mathematics: What parents should know about...estimation.* Reston, VA: National Council of Teachers of Mathematics [NCTM]. (ED 223 426)

Elementary School Mathematics: What Parents Should Know About...Problem Solving outlines general guidelines to help parents develop their child's problem-solving ability. The first section lists four characteristics of good problem solvers: (1) ability to identify important skills; (2) flexibility of thinking; (3) perseverance; and (4) a sense of knowing what is reasonable. Various exercises are suggested to develop problem-solving experiences, including a 10-step problem-solving poster. Answers to problems and suggested resource materials are provided.

Reys, B. (1982). *Elementary school mathematics: What parents should know about...problem solving.* Reston, VA: NCTM. (ED 223 427)

"Geometry in Your Cupboard!" is a reproducible send-home sheet that lists seven mathematics-related activities that parents can try with their children.

Kanter, P. (1990, April). Geometry in your cupboard! *Instructor, 99*(8), 30.

Girls + Math + Science = Choices: A Handbook for Parents is intended to help parents stimulate their daughters' interest in career paths for young women in mathematics- and science-related areas. Main topics include: (1) the dearth of women in the sciences (includes a fact sheet); (2) practical advice and guidelines; (3) activities; (4) reading materials; (5) resource information, including books, periodicals, and organizations; and (6) a short bibliography.

Arbanas, R. J., & Lindquist, G. R. (Eds.). (1989). *Girls + math + science = Choices: A handbook for parents*. Marshall, MI: Calhoun Intermediate School District. (ED 313 245)

"Help Children Succeed in Math and Science" focuses on young girls, African-Americans, and Hispanics who have few role models in the scientific and engineering communities. National reform is underway in mathematics and science education, and parents can participate through PTAs and by working with teachers. A list of resources is included.

Williams, L. (1991, March). Help children succeed in math and science. *PTA Today, 16*(5), 16-18.

Help Your Child Learn Math states that "the most important thing you can do is to reinforce the mathematics lessons your child receives in school." The helping strategies are designed for children in grades 1–3 but may also be useful for older children having difficulty in mathematics. Three essentials needed to learn mathematics are described: understanding, practice, and seeing patterns. Suggestions for working with a child on counting, estimating, measuring, and correcting mistakes are given.

Office of Educational Research and Improvement. (1987). *Help your child learn math*. Washington, DC: U.S. Department of Education. (ED 280 676)

The Helping Book: Fifth Grade Math for Parents of ECIA, Chapter 1 Fifth Grade Students is a booklet for parents of children participating in the Chapter 1 programs in Louisiana. Activities to practice every mathematics skill that must be learned before going to grade 6 are included. Activities involve numeration, whole number operations, fractions, decimals, relations and functions, measurement and estimation, geometry, and problem solving. Answer keys are included.

Louisiana State Department of Education. (1982). *The helping book: Fifth grade math for parents of ECIA, Chapter 1 fifth grade students* (Bulletin 1744). Baton Rouge, LA: Author. (ED 261 877)

Helping Your Child Learn Math With Activities for Children Aged 5 Through 13 is one in a series of booklets on different educational topics to help parents make the most of their child's natural curiosity. The activities are divided into three categories: (1) Math in the Home (money match, name that coin, treasure hunt); (2) Mathland: The Grocery Store (scan it, get into shape, weighing in); and (3) Math on the Go (license plates, number search). Topics covered in the activities include measurement, estimation, probability, computation, fractions, data collection and representation, graphing, and geometry.

Kanter, P. F., & Dorfman, C. H. (Eds.). (1992). *Helping your child learn math with activities for children aged 5 through 13*. Washington, DC: U.S. Department of Education. (ED 355 122)

Helping Your Child With Mathematics, Ages 3–7, is a series of 88 activities for use by teachers and parents. The book is organized into four sections: Understanding Numbers, Using Numbers, Managing Information, and Geometry and Measurement. The activities use household items as manipulative materials.

Riley, J., Eberts, M., & Gisler, P. (1993). *Helping your child with mathematics, ages 3–7*. Glenview, IL: Goodyear Books (1900 E. Lake Ave., Glenview, IL 60025).

Logic Blocks is an interactive computer program designed to help students in grades K–6 to develop spatial sense. The program consists of four different activities in which students manipulate geometric shapes, search for patterns, and apply the properties of form, shape, size, position, and color.

Graylish, M. (1992). *Logic Blocks*. Arlington, TX: Learning Box (4508 Valleycrest Drive, Arlington, TX 76013). Color disk for Macintosh and instruction guide (51 pp), $59.

Math Matters: Kids Are Counting on You is a kit for parents that includes activities, brochures, calculator, stickers, posters, PTA project ideas, and additional resources.

The National PTA. (1989). *Math matters: Kids are counting on you*. Chicago: Author (700 North Rush Street, Chicago, IL 60611-2571). (312) 787-0977.

Math, Science, and Your Daughter: What Can Parents Do? Encouraging Girls in Math and Science is one in a series of four publications designed to assist parents in encouraging their daughters' efforts related to mathematics and science. Six sections suggest how this can be accomplished by: (1) emphasizing the importance of mathematics and science in possible career choices; (2) addressing the impact that parental encouragement has on daughters' attitudes toward mathematics, science, and related careers; (3) recommending activities that parents can do at home to foster a more positive view of mathematics and science; (4) discussing ways that parents can help reduce stereotypes related to women's roles in science and mathematics; (5) recommending that parents be more critical of information that stereotypes women's abilities in science and mathematics; and (6) recommending actions to take when parents think their daughters are treated with bias toward their abilities in science and mathematics.

Campbell, P. B. (1992). *Math, science, and your daughter: What can parents do? Encouraging girls in math and science*. Newton, MA: WEEA Publishing Center (EDC, 55 Chapel Street, Suite 268, Newton, MA 02160). (ED 350 172)

Mathematics: The Language of the 21st Century is a pamphlet that shows parents of young children that mathematics is more than arithmetic and tells why children should study mathematics.

Mathematical Sciences Education Board. (1992). *Mathematics: The language of the 21st century*. Washington, DC: Author (2101 Constitution Avenue NW, HA476, Washington, DC 20418). Free.

Mathematics: What Are You Teaching My Child? is a 20-minute videotape designed to help parents understand why mathematics teaching has changed, how it will benefit children, and what they can do to help. The tape shows adult recollections of their experiences in mathematics classrooms, elementary mathematics classroom vignettes, and adult workers who use mathematics in their job. Discussion includes: manipulative materials, exploration, mathematical connections, problem solving, writing mathematics, curiosity, computers and calculators, communication, group work and collaboration among students, opportunities to learn from wrong answers, estimation, multiple solution methods, and family mathematics.

Burns, M. (1994). *Mathematics: What are you teaching my child?* [A videotape for parents]. New York: Scholastic (555 Broadway, New York, NY 10012).

Multiplication Rap: For Grades 3 to 6; Addition Rap: For Grades 1 to 2; and ***Subtraction Rap: For Grades 1 to 2*** are three cassettes of motivational raps that encourage memorization of basic facts.

Star Trax Productions. (1988). *Multiplication rap: For grades 3 to 6*; (1990). *Addition rap: For grades 1 to 2*; (1990). *Subtraction rap: For grades 1 to 2*. Boise, ID: Author (P.O. Box 2682, Boise, ID 83701). $25 each.

"Parents: A Ready Resource" presents the highlights of a study of educational intervention in the elementary grades that features a parent-participation component. Included are eight tenets of parental involvement, sample activities, and an evaluation form for home activities.

Goldstein, S., & Campbell, F. A. (1991, February). Parents: A ready resource. *Arithmetic Teacher*, *38*(6), 24-27.

"Parents and Mathematical Games" describes four mathematical games that parents can play with their children. These games help children learn and practice mathematics in the home.

Tregaskis, O. (1991, March). Parents and mathematical games. *Arithmetic Teacher*, *38*(7), 14-16.

"Parents Can Help Children Learn Mathematics" describes activities that can be shared by parents and children around the house, in the yard, at the playground, and around the neighborhood. Guidelines for parents are included.

Ashlock, R. B. (1990, November). Parents can help children learn mathematics. *Arithmetic Teacher*, *38*(3), 42-46.

A Parent's Handbook offers American Indian parents some suggestions on ways to promote their children's educational success, particularly in the areas of science and mathematics. American Indian participation in science, engineering, and technology-related occupations promotes Indian control and management of the natural resources on Indian land. The American Indian Science and Engineering Society sponsors math and science summer camps for students in grades 7–9 and a comprehensive university-based enrichment program to prepare students in grades 8–11 for entrance into math and science college majors.

American Indian Science and Engineering Society. (1990). *A parent's handbook*. Boulder, CO: Author. (ED 343 742)

Pizzas, Pennies and Pumpkin Seeds: Mathematical Activities for Parents and Children is organized around common activities like shopping, gardening, or riding in the family car. Appendices include lists of books on mathematics, games and gifts, resources, a formula for finding the day of the week, palindromes, and discussions of intuitive geometry for preschoolers.

Apelman, M., & King, J. (1989). *Pizzas, pennies and pumpkin seeds: Mathematical activities for parents and children*. Denver, CO: Colorado State Department of Education. (ED 327 395)

"Purr-r-r-fectly Wild About Mathematics" discusses the planning, organizing, and implementing of a week of mathematics activities at an elementary school. Describes five activity stations, including mental mathematics, calculator mathematics, estimation, geoboards and tangrams, and graphing.

Jacobs, J. W. (1989, December). Purr-r-r-fectly wild about mathematics. *Arithmetic Teacher*, *37*(4), 4-5.

Sharing Maths Learning With Children—A Guide for Parents, Teachers and Others presents material so that families will learn, think, and talk about mathematics together. Many family-life lessons, such as weighing out ingredients for a cake or choosing the best route to the zoo, are presented. The book has nine chapters devoted to: (1) key issues in mathematics; (2) mathematics learning theory; (3) prior knowledge and student and teacher roles; (4) teaching methods involving problems, language, mathematical symbols, and questioning; (5) dealing with anxiety and working cooperatively with your child; (6) number, measurement, estimation, and space involving whole numbers, fractions, decimals, basic algebra, measurement, and geometry; (7) technology; (8) family fun mathematics; and (9) follow up. Appendices contain recommended materials, mathematical terms and symbols, and statements of professional organizations on mathematics education.

Costello, P., Horne, M., & Munro, J. (1991). *Sharing maths learning with children—A guide for parents, teachers and others*. Victoria: Australian Council for Educational Research (Radford House, Frederick Street, Hawthorn, Victoria 3122, Australia). (ED 364 402)

Spreadsheet Workshop, Grades 3–8 supplies a standard spreadsheet and more than a dozen special forms so students can solve

real-life problems requiring large amounts of data without getting bogged down in arithmetic calculations.

Scott, Foresman & Co. (1991). *Spreadsheet workshop, grades 3–8*. Glenview, IL: Author (1900 E. Lake Ave., Glenview, IL 60025). Activity book for IBM (111 pp), reference guide (63 pp), and sheets of adhesive labels are available.

Square One TV is a Public Broadcasting System mathematics series that is both entertaining and instructive. Produced by Children's Television Workshop and geared toward 8- to 12-year-olds, the show teaches basic math concepts and how they can be used to solve problems in daily life. The lessons come in the guise of fast-paced, media-savvy spoofs of familiar television shows.

"Table-Top Mathematics—A Home-Study Program for Early Childhood" presents simple activities that can be completed by students at home with the help of a parent. Activities include the topics of sorting, patterning, counting and numbers, geometry, adding, subtracting, and measuring. Each activity comprises a series of sequenced tasks related to one of the topics.

Ford, M. S., & Crew, C. G. (1991, April). Table-top mathematics—A home-study program for early childhood. *Arithmetic Teacher*, *38*(8), 6-12.

Tutoring Your Child advises parents to remain positive and patient, be aware of their child's feelings, keep the tutoring time short, select a quiet place away from distractions, and use games and manipulative objects rather than more abstract experiences. In mathematics, helpful activities include showing the everyday uses of numbers, adding and subtracting things in the home, and discovering number facts using toothpicks.

Cohn, J. (1988). *Tutoring your child*. Sacramento, CA: Special Education Resource Network, California State Department of Education. (ED 300 971)

You Can Count on Mathematics: Developing Awareness and Mastery. Parent Participation—A Formula for Success provides numerous mathematical activities and suggests children's books that combine both math and reading skills. The material is divided into sections that cover grades preK–2, 3–6, and 7–12. The document concludes with a brief bibliography of suggested resources for adults and a summary that speaks of parents as valuable resources for their child's classroom teacher.

Indiana State Department of Public Instruction. (1981). *You can count on mathematics: Developing awareness and mastery. Parent participation—A formula for success*. Indianapolis: Division of Reading Effectiveness. (ED 212 474)

You Can Help Your Young Child Learn Mathematics = Usted Puede Ayudar a Sus Hijos a Aprender Mathematicas are two booklets (one in English and one in Spanish) designed to help parents become more involved in their children's mathematics education. Each booklet is divided into two sections. The first section explains why mathematics is important for children to learn as they prepare themselves for a place in today's society; discusses the function of parents in this preparation; urges parents to participate in school activities; explains how parents can encourage their children and help them develop good study habits; and encourages parents to help their children see that mathematics is not just numbers, but concepts and ideas. The second section suggests ways in which mathematics can be incorporated into family activities, such as shopping, traveling, gardening, cooking, and playing games.

Office of Educational Research and Improvement. (1993). *You can help your young child learn mathematics = Usted puede ayudar a sus hijos a aprender mathematicas*. Washington, DC: U.S. Department of Education. (ED 356 574)

Parent/Teacher Activities

The Busy Parent's Guide to Involvement in Education is a practical and informative booklet that shows busy parents how to motivate their children to enjoy school, how to work as partners with their children's teachers, and how to get involved with school and PTA.

Albert, L. (1992). *The busy parent's guide to involvement in education*. Chicago: National PTA (700 Rush Street, Dept. BHG, Chicago, IL 60611-2571). (312) 951-6782. Free, with a minimum order of 100.

Get Into the Equation: Math and Science, Parents and Children contains sections on: (1) why minority parents are concerned; (2) what parents should know about mathematics and science classes; (3) the parent's role in monitoring homework; (4) extra activities in science and mathematics; (5) helping children prepare for tests; and (6) home projects for parents and younger children. The booklet stresses the use of calculators and computers in math and science courses, K–12.

The College Board. (1987). *Get into the equation: Math and science, parents and children*. New York: Author (Box 886, New York, NY 10023). Available in packets of 50. (ED 295 785)

"Ideas" is a monthly column in the *Arithmetic Teacher* that features integrated science and mathematics activities adapted to several different grade levels. The February 1991 topic focuses on gathering, displaying, and interpreting data on balloons. Students are involved in sampling, taking polls and surveys, doing experiments, classifying, estimating, and measuring. Included are directions, extensions, and activity sheets for students and parents.

Westley, J. E. (1991, February). Ideas. *Arithmetic Teacher*, *38*(6), 30-36.

Integration of Science and Mathematics presents information for parents about the current movement toward integrating science and mathematics.

Berlin, D. F., & White, A. L. (1993). *Integration of science and mathematics*. Columbus, OH: The National Center for Science Teaching and Learning (The Ohio State University, 1929 Kenny Road, Columbus, OH 43210).

"Involving Parents in the Mathematics Education of Their Young Handicapped Child" discusses the importance of involving parents of handicapped children in mathematics instruction. Some tips for parents are included.

Bruneau, O. J. (1988, December). Involving parents in the mathematics education of their young handicapped child. *Arithmetic Teacher*, *36*(4), 16-18.

Issues of Curriculum Reform in Science, Mathematics, and Higher Order Thinking Across the Disciplines discusses current curricular reform movements and how to help students think at higher levels in all subjects.

Anderson, R. D., Anderson, B. L., Varanka-Martin, M., Romagnano, L., Bielenberg, J., Mieras, B., Witworth, J., & Flory, M. (1994, January). *Issues of curriculum reform in science, mathematics, and higher order thinking across the disciplines*. Washington, DC: Office of Educational Research and Improvement (2101 Constitution Avenue NW, HA487, Washington, DC 20418). Free. (ED 368 064)

Math Help for Home and School. Book 1: For Ages 4–6; Book 2: For Ages 5–7; Book 3: For Ages 6–8; and Book 4: For Ages 7–9 were designed as a teaching tool for use at both home and school. Mathematical skills are presented in increasing order of difficulty, with each page building on the previous one, so that there is a built-in success factor. This success is presumed to convey the idea that learning mathematics is fun. Brief notes are provided for parents and teachers.

Levy, B. W. (1984). *Math help for home and school. Book 1: For ages 4–6* (ED 280 727); *Book 2: For ages 5–7* (ED 280 728); *Book 3: For ages 6–8* (ED 280 729); *Book 4: For ages 7–9* (ED 280 730). Carthage, IL: Good Apple (P.O. Box 299, Carthage, IL 62321).

"Mathematics Backpacks: Making the Home–School Connection" describes backpacks containing four mathematics activities designed to (1) strengthen the home–school connection; (2) present open-ended activities that encourage discussion; and (3) engage students and parents in learning mathematical concepts. Provides a sample draft letter to parents, example activities, guidelines for developing backpacks, and sample family journal entries.

Orman, S. A. (1993, February) Mathematics backpacks: Making the home–school connection. *Arithmetic Teacher*, *40*(6), 306-08.

"The Mathematics–Children's-Literature Connection" describes three types of children's books for use in developing mathematical concepts. Discusses the characteristics of a good mathematical concept book, methods of incorporating reading into mathematics class, and three examples of children's books. Includes a bibliography of 159 children's trade books selected for integration into mathematics instruction.

Gailey, S. K. (1993, January). The mathematics–children's-literature connection. *Arithmetic Teacher*, *40*(5), 258-61.

"Mathematics on the Home Front" provides suggestions for getting the message to parents about the need to help their children with mathematics. Goals of mathematical activities at home and what activities parents should provide are described.

Flexer, R. J., & Topping, C. L. (1988, October). Mathematics on the home front. *Arithmetic Teacher*, *36*(2), 12-19.

Mathematics: Teaching for Understanding, Grades K–6, (Parts 1–3) is a series of videotapes of elementary school classrooms where instructional practices recommended by the National Council of Teachers of Mathematics are implemented. Topics discussed include problem solving, active learning, manipulatives, cooperative grouping, discussion, justification of thinking, writing, and ongoing assessment. Although designed for teacher development, these tapes may be useful for parents in understanding these teaching methods.

Burns, M. (1992). *Mathematics: Teaching for understanding, grades K-6, (Parts 1-3)*. White Plains, NY: Cuisenaire Co. of America (P.O. Box 5026, White Plains, NY 10602). Three VHS videocassettes (30 min. each) and teacher discussion guide (64 pp), $225.

"Parental Involvement in Gifted Education" proposes that parents of highly gifted children should work in close collaboration with education authorities. How an individualized education program for one child was devised and comments on preschool and tertiary education are described.

Tao, B. (1986, August). Parental involvement in gifted education. *Educational Studies in Mathematics*, *17*(3), 313-21.

Parents and Schools: A Source Book presents information on parent involvement and is a guide for parents and community organizations for understanding the meaning of partnerships between school and community.

Carrasquillo, A. L., & London, C. B. G. (1993). *Parents and schools: A source book*. New York: Garland Publishing.

Teenagers, Teachers, and Mathematics is intended for teachers and parents and provides a wealth of information; much of it research-based, all of it presented in a balanced, easy-to-read style. Chapters deal with the current reports on mathematics in schools, with the needs of teenage students, and with individual differences, learning, reasoning, problem solving, using computers and calculators, and preparing for college.

Thomas, D. A. (1992). *Teenagers, teachers, and mathematics*. Boston: Allyn & Bacon. $33.95.

Programs

"The American Indians in Mathematics Project (AIM)" describes a three-year summer program designed to increase mathematics achievement for American Indian ninth- and tenth-grade student leaders from reservation schools. The AIM program involves intensive teacher training, workshops for parents, follow-up

technology/visualization workshops, and ongoing communication among teachers, students, and faculty at Montana State University.

Anderson, L., & Stein, W. (1992). The American Indians in Mathematics project (AIM). *Journal of Rural and Small Schools*, 5(2), 24-31.

Developing and Implementing a Parental Awareness Program To Enhance Children's Mathematics Performance and Attitude was a practicum project whose goal was to involve parents in their children's mathematics learning. To accomplish this aim, efforts were made to improve children's performance and attitudes toward mathematics; to enable teachers to recognize the value of activities and games as an alternative to learning by rote; and to offer opportunities for parents to participate in workshops in order to obtain the knowledge necessary to help their children with mathematics, to explore various activities, and to have a hands-on experience with math materials at home. Appended are the evaluation forms, recommendations for parents, descriptions of number tricks, samples of children's activity sheets, descriptions of games played, and math challenges.

Goldberg, S. (1990). *Developing and implementing a parental awareness program to enhance children's mathematics performance and attitude*. Unpublished doctoral practicum, Nova University, Fort Lauderdale, Florida. (ED 327 383)

Development of a Math Manipulative Parent/Teacher Training Program for Remediating Elementary Chapter 1 Students was designed to address the lack of parent and teacher understanding of the value of manipulatives used by Chapter 1 math tutors to remediate students. A second aim was to acquaint and assist parents and teachers with remediation of educationally deprived elementary school aged children by using manipulatives, especially to reinforce basic skills.

Allen, R. (1990). *Development of a math manipulative parent/teacher training program for remediating elementary Chapter 1 students*. Unpublished doctoral practicum, Nova University, Florida. (ED 325 399)

"Families Tackle Math as a Game—Together" describes the Family Math program for elementary school students and their families in Springfield (Massachusetts). Goals include the following: (1) increase minority parent participation; (2) overcome math anxiety; and (3) encourage mathematics participation.

Caldwell, J. (1989, February). Families tackle math as a game—Together. *Equity and Choice*, 5(1), 21-23.

FAMILY MATH: A Report of an Intervention Program That Involves Parents in Their Children's Mathematics Education describes the FAMILY MATH course developed to teach parents how to help their children learn mathematics. The goals of the program are to: (1) provide parents with activities to help their children with mathematics at home; (2) provide parents with information about the importance of mathematics in future schooling and work; (3) inform families about equity issues in mathematics; (4) inform parents that mathematics is important for all students; (5) build awareness that mathematics consists of more than arithmetic and rote computations; (6) develop problem-solving skills and the ability to talk about mathematics; (7) build positive attitudes toward mathematics; (8) help parents feel that they can and do make a difference in their children's mathematics education; and (9) provide an opportunity for all members of the family to understand that math is more than arithmetic. The document includes results of a survey of class participants, sample materials, a description of the evolution of the project, and projections of future activities.

Thompson, V., & Kreinberg, N. (1986). *FAMILY MATH: A report of an intervention program that involves parents in their children's mathematics education*. Paper presented at the annual meeting of the American Association for the Advancement of Science, Philadelphia, PA. (ED 295 837)

Implementing a Training Workshop To Improve Parent Use of Appropriate Home Activities With Kindergarten Children describes a series of parent workshops designed to explain the philosophy of developmentally appropriate practices with children and to train parents to select activities that follow this philosophy. The second workshop focuses on critical thinking in mathematics. Models for questioning techniques and suggestions for creative activities are provided.

Neitzey, S. C. (1992). *Implementing a training workshop to improve parent use of appropriate home activities with kindergarten children*. Unpublished Master's Practicum, Nova University, Florida. (ED 354 989)

"Integrating Math and Computer Learning Through an Early Childhood School–Home Approach" describes an early childhood program designed to increase children's school success in attaining key math, language, and computer learning concepts and skills. Home visits, parent training sessions, teacher-parent conferences, a home learning center, and a computer home-loan program strengthen parent involvement in their child's education.

Swick, K. J. (1992). Integrating math and computer learning through an early childhood school–home approach. *Journal of Rural and Small Schools*, 5(2), 9-17.

"The Jaime Escalante Math Program" describes the success of the Escalante Math Program in East Los Angeles in teaching mathematics to poor minority students. Fundamental principles of the program include: (1) accountability; (2) hard work; (3) demand; (4) love; (5) parental involvement; (6) respect and values; (7) nutrition; and (8) drug use prevention. Discusses program origins, teaching methods, and educational psychology.

Escalante, J., & Dirmann, J. (1990, Summer). The Jaime Escalante math program. *Journal of Negro Education*, 59(3), 407-23.

"The Kay Toliver Mathematics Program" presents fundamentals of the author's approach to teaching drawn from her experiences in New York City, including (1) caring; (2) high expectations;

(3) creating interest; (4) keeping students busy to avoid discipline problems; (5) performance-based assessment; and (6) parent involvement. Techniques and tactics for teaching mathematics are also presented.

Toliver, K. (1993, Winter). The Kay Toliver mathematics program. *Journal of Negro Education*, *62*(1), 35-46.

"Math Pairs: Parents as Partners" describes a program to improve problem-solving skills of children by incorporating parents as partners in cooperative learning experiences with the children. Research results indicate that students working with parental partners display higher problem-solving ability on posttests than those not working with partners.

O'Connell, S. R. (1992, September). Math pairs: Parents as partners. *Arithmetic Teacher*, *40*(1), 10-12.

A Parent's Guide to Great Explorations in Math & Science presents information for parents about the Great Explorations in Math and Science (GEMS) Program.

GEMS. (1991). *A parent's guide to great explorations in math & science*. Berkeley, CA: Lawrence Hall of Science.

"Say YES to a Youngster's Future: A Model for Home, School, and Community Partnership" is a project of the National Urban Coalition that appears to confirm the potential of activity-based instruction as a vehicle for increasing student interest and achievement, not only in science and mathematics but also in reading. Describes parent and community involvement in activity-based enrichment programs for children of color.

Beane, D. (1990, Summer). Say YES to a youngster's future: A model for home, school, and community partnership. *Journal of Negro Education*, *59*(3), 360-74.

Sharing Maths Cultures: IMPACT (Inventing Maths for Parents and Children and Teachers) describes the IMPACT project, a project that involves parents in the primary school curriculum and includes curriculum materials designed to be valid across different cultures. This book describes and promotes educational settings in which the child is not the object of teaching, but rather, is the initiator and tutor. It explains how any teacher or school can set up and run a similar initiative. Detailed examples are given of the processes involved and the specific methods used for effective parental involvement. It describes and discusses sample materials for implementing the IMPACT scheme and outlines a radically new approach to evaluation.

Merttens, R., & Vass, J. (1990). *Sharing maths cultures: IMPACT (Inventing Maths for Parents and Children and Teachers)*. Philadelphia: Falmer Press (Taylor & Francis, Inc., 242 Cherry Street, Philadelphia, PA 19106-1906). $22.00. (ED 342 613)

Social Class and Ability Group Placement in Mathematics in the Transition to Seventh Grade: The Role of Parental Involvement examines the degree to which parents were involved in the assignment of their children to mathematics courses in the seventh grade, on the premise that it is important to examine parental attitudes as children enter the middle grades since it is at this point that decisions shaping students' subsequent course-taking patterns are made.

Useem, E. L. (1990, April). *Social class and ability group placement in mathematics in the transition to seventh grade: The role of parental involvement*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA. (ED 319 591)

"Teaching Mathematics With Technology: Build Parental Support for Mathematics With Family Computers" describes "Family Computers," an educational program developed by Project EQUALS that brings families together weekly to have fun with mathematics while using computers. Discusses software selection, provides a lesson plan for grades 4–8, and presents 7 tips for instructors.

Joseph, H. (1993, March). Teaching mathematics with technology: Build parental support for mathematics with Family Computers. *Arithmetic Teacher*, *40*(7), 412-15.

"Teaching Mathematics With Technology: Family Math Enhanced Through Technology" describes five examples of how technology can be integrated into Family Math nights. Activities involve graphing, managing money, developing mental mathematics skills, developing deductive and spatial reasoning, and using tangrams to explore patterns and spatial relationships. Includes a list of software publishers.

Bayliffe, J., Brie, R., & Oliver, B. (1993, November). Teaching mathematics through technology: Family math enhanced through technology. *Arithmetic Teacher*, *41*(3), 172-75.

"Tennessee Parents Were Invited to Participate—And They Did" explains two phases of Tennessee's statewide efforts to strengthen parent–school partnerships. One Phase I program is based on Purkey's Invitational Education concept aimed at increasing parent and community involvement. Phase II models include Active Parenting, New Parents as Teachers, and an Operation Fail-Safe intervention program. Lists seven references.

Lueder, D. C. (1989, October). Tennessee parents were invited to participate—And they did. *Educational Leadership*, *47*(2), 5-17.

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1) Journal and magazine articles may be found at college or public libraries. Some articles can be ordered for a fee from an article reprint service. Two reprint services are:

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2) ERIC documents (those having ED or SE numbers) can be read at any library holding an ERIC microfiche collection. Copies can also be ordered, for a fee, from the ERIC Document Reproduction Service (EDRS): (800) 443-ERIC.

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